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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/718,151

Filing Date: November 20, 2003

Appellant(s): LIN, I-JONG

Steven L. Nichols
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed on 4/16/10 appealing from the Office action mailed 12/16/09.

(1) Real Party in Interest

The brief contains a statement identifying by name the real party in interest.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The examiner agrees with the appellant on the status of claims. The following is a list of claims that are rejected and pending in the application:

- I. Claims 1-6 are allowed and pending in the application.
- II. Claims 7, 8, 10-14, 16-20 and 22-25 are rejected and pending in the application.
- III. Claims 9, 15 and 21 are objected and pending in the application.

(4) Status of Amendments After-Final

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

(5) Summary of Claimed Subject Matter

The examiner agrees with the appellant on the summary of claimed subject matter and has no comments regarding it.

(6) Grounds of Rejection to be Reviewed on Appeal

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

(7) Claims Appendix

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant's brief.

(8) Evidence Relied Upon

5,345,313	BLANK	9-1994
5,208,871	ESCHBACH	5-1993

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 7, 8, 10, 11, 13, 14, 16, 17, 19, 20, 22, 23 and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Blank (US pat no 5,345,313).

With regards to **claim 7**, Blank discloses a method for processing a display image (*see figure 1*) comprising the steps of:

passively testing a first version of said displayed image captured by an image capture device to determine if a portion of said displayed image is blocked from said image capture device (*the video capturing device is shown in figure 1, element 16, on column 8, lines 44-53, determines whether the test pixel is an edge pixel, if it is an edge pixel then it is also an occluded pixel, and see figure 5C, the image is read as the first version, where 66 is determined to be an edge*);

actively testing said portion of said displayed image based on said first version of said displayed image and a second version of said displayed image to confirm whether said portion of said displayed image is blocked from said image capture device (*see column 10, lines 30-35, the coarse stripping operation determines whether the current pixel should be part of the edge of a*

box, wherein the edge of a box contains plurality of pixels determined in steps discussed previously on column 8, lines 44-53),

wherein said second version of said displayed image is captured by said image capture device after being displayed on said a display device (*see figure 1, element 20 is a video display which displays the object, 22 and background 24, while being displayed, an image is captured using a video grabber, discussed on column 6, lines 60 to column 7, line 3*); and

an electronic display for displaying an image (*see figure 1, element 20*).

With regards to **claim 8**, Blank discloses comparing a value of each pixel of said first version of said displayed image captured by said image captured by said image device after being displayed on a display device (*see figure 4, 60, current pixel is compared to the last pixel, where all pixels in the image is compared to each other*).

With regards to **claim 10**, Blanks discloses testing another portion of said display image proximate said confirmed portion of said displayed image for occlusion (*figure 4, 70 indicates the entire image is tested, so more than one pixel is tested*).

With regards to **claim 11**, Blanks discloses actively testing all of the pixels of said displayed image, prior to said step passively testing to initialize an estimate of said displayed image (*see figure 5A, is the initial image captured by imaging device*).

With regards to **claim 13**, Blank discloses a computer-readable medium containing a program (*see figure 3*) that performs the steps of:

passively testing a first version of a displayed image captured by an image capture device to determine if a portion of said displayed image is blocked from said image capture device (*the video capturing device is shown in figure 1, element 16, on column 8, lines 44-53, determines whether the test pixel is an edge pixel, if it is an edge pixel then it is also an occluded pixel, and see figure 5C, the image is read as the first version, where 66 is determined to be an edge*); and

actively testing said portion of said displayed image based on said first version of said displayed image and a second version of said displayed image to confirm whether said portion of said displayed image is blocked from said image capture device (*see column 10, lines 30-35, the coarse stripping operation determines whether the current pixel should be part of the edge of a box, wherein the edge of a box contains plurality of pixels determined in steps discussed previously on column 8, lines 44-53*),

wherein said second version of said displayed image is captured by said image capture device after being displayed on an electronic display (*see figure 1, element 20 is a video display which displays the object, 22 and background 24, while being displayed, an image is captured using a video grabber, discussed on column 6, lines 60 to column 7, line 3*).

With regards to **claim 14**, Blank discloses comparing a value of each pixel of said first version of said displayed image captured by said image capture device to a corresponding value of each pixel of said displayed image (*see figure 4, 60, current pixel is compared to the last pixel, where all pixels in the image is compared to each other*).

With regards to **claim 16**, Blank discloses testing another portion of said displayed image proximate said confirmed portion of said displayed image for occlusion (*see figure 4, 70 indicates the entire image is tested, so more than one pixel is tested*).

With regards to **claim 17**, Blank discloses actively testing all of the pixels of said displayed image, prior to said step of passively testing, to initialize an estimate of said displayed image (*see figure 5A, is the initial image captured by imaging device*).

With regards to **claim 19**, Blank discloses an image processing system comprising:

- an electronic display for displaying an image (*see figure 1, element 20, is a display device displaying an image of object 20*);
- an image capture device for capturing a first version of said displayed image (*see figure 1, element 16*); and
- a processor, connected to said display and said image capture device for:
 - passively testing said first version of said displayed image captured by said image capture device to determine if a portion of said displayed image is blocked from said image capture device (*the video capturing device is shown in figure 1, element 16*,

on column 8, lines 44-53, determines whether the test pixel is an edge pixel, if it is an edge pixel then it is also an occluded pixel, and see figure 5C, the image is read as the first version, where 66 is determined to be an edge); and

for actively testing said portion of said displayed image based on said first version of said displayed image and a second version of said displayed image to confirm whether said portion of said displayed image is blocked from said image capture device (*see column 10, lines 30-35, the coarse stripping operation determines whether the current pixel should be part of the edge of a box, wherein the edge of a box contains plurality of pixels determined in steps discussed previously on column 8, lines 44-53*),

wherein said second version of said displayed image is captured by said image capture device after being displayed on said electronic display (*see figure 1, element 20 is a video display which displays the object, 22 and background 24, while being displayed, an image is captured using a video grabber, discussed on column 6, lines 60 to column 7, line 3*).

With regards to **claim 20**, Blank discloses testing by comparing a value of each pixel of said version of said displayed image captured by said image capture device to a corresponding value of each pixel of said displayed image (*see figure 4, 60, current pixel is compared to the last pixel, where all pixels in the image is compared to each other*).

With regards to **claim 22**, Blank discloses testing another portion of said displayed image proximate said confirmed portion of said displayed image for occlusion (*see figure 4, 70 indicates the entire image is tested, so more than one pixel is tested*).

With regards to **claim 23**, Blank discloses performing active testing prior to said passive testing by actively testing all of the pixels of said displayed image to initialize an estimate of said displayed image (*see figure 5A, is the initial image captured by imaging device*).

With regards to **claim 25**, Blank discloses an image processing system comprising:

means for electronically displaying an image (*see figure 1, 20 is displaying the image of object 22*);

means for capturing a first version of said displayed image (*see figure 5A, is the first image captured by device 16*); and

means, connected to said means for electronically displaying (*see figure 1, 20 is displaying the image of object 22*) and said

means for capturing,

for passively testing said first version of said displayed image captured by said means for capturing to determine if a portion of said displayed image is blocked from said means for capturing (*the video capturing device is shown in figure 1, element 16, on column 8, lines 44-53, determines whether the test pixel is an edge pixel, if it is an edge pixel then it is also an occluded*

pixel, and see figure 5C, the image is read as the first version, where 66 is determined to be an edge) and

for actively testing said portion of said displayed image based on said first version of said displayed image and a second version of said displayed image to confirm whether said portion of said displayed image is blocked from said means for capturing (see column 10, lines 30-35, the coarse stripping operation determines whether the current pixel should be part of the edge of a box, wherein the edge of a box contains plurality of pixels determined in steps discussed previously on column 8, lines 44-53),

wherein said second version of said displayed image is captured by said means for capturing after being displayed on said means for electronically displaying (see figure 1, element 20 is a video display which displays the object, 22 and background 24, while being displayed, an image is captured using a video grabber, discussed on column 6, lines 60 to column 7, line 3).

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 12, 18 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blanks '313 in view of Eschbach (US pat no 5,208,871).

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With regards to **claim 12**, Blanks discloses all the limitations of claim 7, but does not discloses changing a threshold associated with said step of passively testing said first version of said displayed image, based upon a result of said of actively testing said portion of said displayed image.

Eschbach discloses changing a threshold associated with said step of passively testing said first version of said displayed image, based upon a result of said of actively testing said portion of said displayed image (*see column 9, lines 2-7*).

It would have been obvious to one having ordinary skill in the art at the time of the invention was made to include the teachings of Eschbach into Blank, which is changing a threshold associated with said step of passively testing said first version of said displayed image to modify values of blurry edges further improving image quality.

With regards to **claim 18**, Blanks discloses all the limitations of claim 7, but does not discloses changing a threshold associated with said step of passively testing said first version of said displayed image, based upon a result of said of actively testing said portion of said displayed image.

Eschbach discloses changing a threshold associated with said step of passively testing said first version of said displayed image, based upon a result of said of actively testing said portion of said displayed image (*see column 9, lines 2-7*).

It would have been obvious to one having ordinary skill in the art at the time of the invention was made to include the teachings of Eschbach into Blank, which is changing a

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threshold associated with said step of passively testing said first version of said displayed image to modify values of blurry edges further improving image quality.

With regards to **claim 24**, Blanks discloses all the limitations of claim 7, but does not discloses changing a threshold associated with said step of passively testing said first version of said displayed image, based upon a result of said of actively testing said portion of said displayed image.

Eschbach discloses changing a threshold associated with said step of passively testing said first version of said displayed image, based upon a result of said of actively testing said portion of said displayed image (*see column 9, lines 2-7*).

It would have been obvious to one having ordinary skill in the art at the time of the invention was made to include the teachings of Eschbach into Blank, which is changing a threshold associated with said step of passively testing said first version of said displayed image to modify values of blurry edges further improving image quality.

(10) Response to Appellant's Arguments

I. On page 14 of the appeal brief, with regards to **claim 7**, the appellant stated: "Still further, Blank does not teach or suggest "*passively testing* a first version of said displayed image captured by an image capture device to determine if a portion of said displayed image is blocked from said image capture device; and *actively testing* said portion of said displayed image based on said first version of said displayed image and a second version of said displayed image to

confirm whether said portion of said displayed image is blocked from said image capture device." (Claim 7) (emphasis added)."

The examiner disagrees.

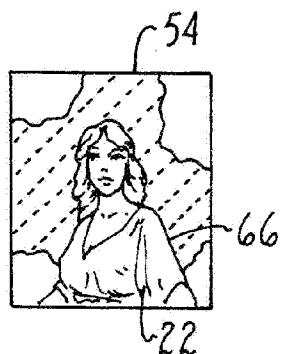
The claimed terms "passively testing" and "actively testing," are nothing more than "testing a first version of said displayed image captured by an image capture device ..." (while the rest of limitation is intended use language), and "testing said portion of said displayed image based on said first version of said displayed image and a second version of said displayed image to confirm whether said portion of said displayed image is blocked from said image capture device" respectively. The examiner does not view the limitations passively testing and actively testing as having special definition. Rather, they are given the broadest reasonable interpretation. With this perspective, it is viewed that the applied prior arts read against the two testing steps as claimed.

Blank (US pat no 5,345,313) *reads on* a method for processing a display image (*see figure 1*) comprising the steps of:

passively testing a first version of said displayed image captured by an image capture device to determine if a portion of said displayed image is blocked from said image capture device (*the video capturing device is shown in figure 1, element 16, on column 8, lines 44-53, determines whether the test pixel is an edge pixel, if it is an edge pixel then it is also an occluded*

pixel, and see figure 5C, the image is read as the first version, where 66 is determined to be an edge);

When the transputer 44 determines, at decision block 60, that the difference between the standard pixel and the pixel under test exceeds the predetermined difference, indicating that the test pixel is not a background pixel and is therefore representative of an edge 66 of the image of the model 22 (FIG. 5, Roman numeral III) which has been imaged against the monochrome background 24 (FIG. 1), the transputer 44 stores the location of the test pixel in memory. Stated differently, the transputer 44 maps the test pixel as a portion of the edge 66.



actively testing said portion of said displayed image based on said first version of said displayed image and a second version of said displayed image to confirm whether said portion of said displayed image is blocked from said image capture device (*see column 10, lines 30-35, the coarse stripping operation determines whether the current pixel should be part of the edge of a box, wherein the edge of a box contains plurality of pixels determined in steps discussed previously on column 8, lines 44-53*),

The specific coarse stripping operation of the transputer 44 in block 90 can be better seen with reference to FIG. 9. Specifically, as indicated in decision block 94 in FIG. 9, the transputer 44 determines whether the current pixel, i.e., the test pixel, should be part of the edge of a box 38. As described previously, the tran-

wherein said second version of said displayed image is captured by said image capture device after being displayed on said a display device (see figure 1, element 20 is a video display which displays the object, 22 and background 24, while being displayed, an image is captured using a video grabber, discussed on column 6, lines 60 to column 7, line 3); and

an electronic display for displaying an image (see figure 1, element 20)

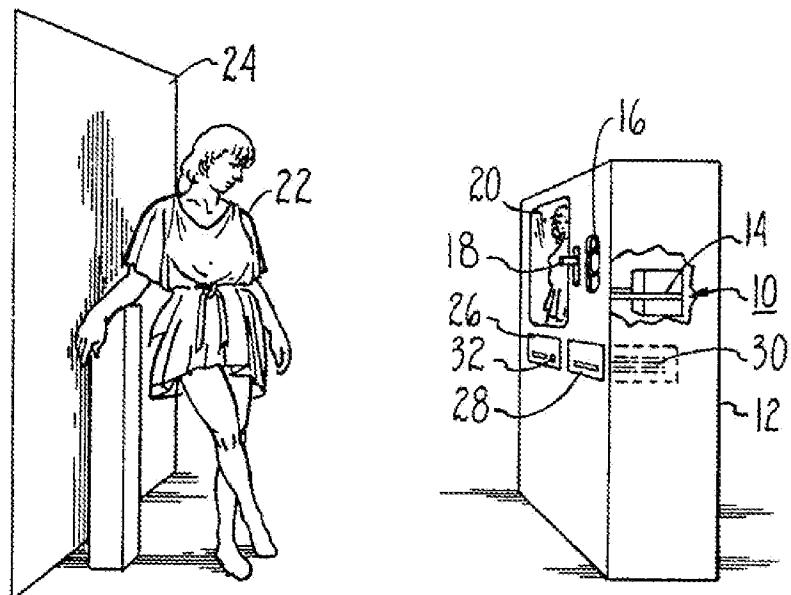
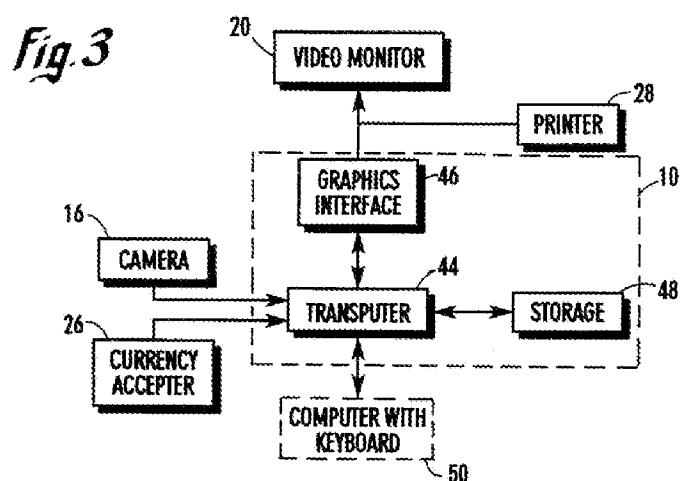


Fig. 1

II. On page 16 of the appeal brief, with regards to claim 13, the appellant stated: "However, the final Office Action's assertions that Blank teaches the recitations of claim 13 are also incorrect. As similarly stated above in connection with independent claim 7, Blank is merely directed to the use of a blue or green monochromatic screen in a system that utilizes chromakey, and does not teach a display device used to produce a displayed image. (See, Blank, col. 6, 11.2-3)."

The examiner disagrees. As discussed above, Blank discloses all the claimed limitations of claim 13.

Specifically, Blank discloses a computer-readable medium containing a program (see figure 3) that performs the steps of:



passively testing a first version of a displayed image captured by an image capture device to determine if a portion of said displayed image is blocked from said image capture device (*the video capturing device is shown in figure 1, element 16, on column 8, lines 44-53, determines whether the test pixel is an edge pixel, if it is an edge pixel then it is also an occluded pixel, and see figure 5C, the image is read as the first version, where 66 is determined to be an edge*); and

actively testing said portion of said displayed image based on said first version of said displayed image and a second version of said displayed image to confirm whether said portion of said displayed image is blocked from said image capture device (*see column 10, lines 30-35, the coarse stripping operation determines whether the current pixel should be part of the edge of a box, wherein the edge of a box contains plurality of pixels determined in steps discussed previously on column 8, lines 44-53*),

wherein said second version of said displayed image is captured by said image capture device after being displayed on an electronic display (*see figure 1, element 20 is a video display which displays the object, 22 and background 24, while being displayed, an image is captured using a video grabber, discussed on column 6, lines 60 to column 7, line 3*).

In addition, the examiner does not rely on the “use of a blue or green monochromatic screen in a system that utilizes chromakey” The examiner only relies on the teachings of Blanks, where the image is displayed and captured on the screen, 20, in figure 1.

III. On page 16, the appellant also stated: "On this point, the final Office Action argues that with regard to Figure 1 of Blank, "the object, 22, and the display device, 24, is constantly shown on the electronic display device, 20." (final Office Action, p. 2). However, as similarly argued above in connection with the patentability of independent claim 7, the video camera 16 of Blank is entirely incapable of imaging the monitor 20, and does not teach or suggest that the video camera 16 is capable of imaging the images displayed on the monitor 20. Therefore, Blank does not teach or suggest a displayed image captured by an image capture device."

The limitations of claim 13 does not require "... video camera 16 is capable of imaging the images displayed on the monitor 20 ..." Further, Blank discloses wherein said second version of said displayed image is captured by said image capture device after being displayed on an electronic display (*see figure 1, element 20 is a video display which displays the object, 22 and background 24, while being displayed, an image is captured using a video grabber, discussed on column 6, lines 60 to column 7, line 3*).

IV. Similarly, Blank discloses all the claimed limitations for claims 19 and 25.

With regards to **claim 19**, Blank discloses an image processing system comprising:

an electronic display for displaying an image (*see figure 1, element 20, is a display device displaying an image of object 20*);

an image capture device for capturing a first version of said displayed image (*see figure 1, element 16*); and

a processor, connected to said display and said image capture device for:

passively testing said first version of said displayed image captured by said image capture device to determine if a portion of said displayed image is blocked from said image capture device (*the video capturing device is shown in figure 1, element 16, on column 8, lines 44-53, determines whether the test pixel is an edge pixel, if it is an edge pixel then it is also an occluded pixel, and see figure 5C, the image is read as the first version, where 66 is determined to be an edge*); and

for actively testing said portion of said displayed image based on said first version of said displayed image and a second version of said displayed image to confirm whether said portion of said displayed image is blocked from said image capture device (*see column 10, lines 30-35, the coarse stripping operation determines whether the current pixel should be part of the edge of a box, wherein the edge of a box contains plurality of pixels determined in steps discussed previously on column 8, lines 44-53*),

wherein said second version of said displayed image is captured by said image capture device after being displayed on said electronic display (*see figure 1, element 20 is a video display which displays the object, 22 and background 24, while being displayed, an image is captured using a video grabber, discussed on column 6, lines 60 to column 7, line 3*).

With regards to **claim 25**, Blank discloses an image processing system comprising:

means for electronically displaying an image (*see figure 1, 20 is displaying the image of object 22*);

means for capturing a first version of said displayed image (*see figure 5A, is the first image captured by device 16*); and

means, connected to said means for electronically displaying (*see figure 1, 20 is displaying the image of object 22*) and said

means for capturing,

for passively testing said first version of said displayed image captured by said means for capturing to determine if a portion of said displayed image is blocked from said means for capturing (*the video capturing device is shown in figure 1, element 16, on column 8, lines 44-53, determines whether the test pixel is an edge pixel, if it is an edge pixel then it is also an occluded pixel, and see figure 5C, the image is read as the first version, where 66 is determined to be an edge*) and

for actively testing said portion of said displayed image based on said first version of said displayed image and a second version of said displayed image to confirm whether said portion of said displayed image is blocked from said means for capturing (*see column 10, lines 30-35, the coarse stripping operation determines whether the current pixel should be part of the edge of a*

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box, wherein the edge of a box contains plurality of pixels determined in steps discussed previously on column 8, lines 44-53),

wherein said second version of said displayed image is captured by said means for capturing after being displayed on said means for electronically displaying (see figure 1, element 20 is a video display which displays the object, 22 and background 24, while being displayed, an image is captured using a video grabber, discussed on column 6, lines 60 to column 7, line 3).

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Alex Liew/

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